

Montana

The state with the second largest quantity of coal reserves

Montana's coal reserves are estimated to be more than 120 billion tons, 24.6 percent of U.S. reserves. Coal resources range from lignite to high-volatile bituminous; however, most of the coal currently mined is subbituminous. The first Montana coal mine opened in 1887. Large-scale surface mining began in Colstrip during the 1920's to fuel railroad steam engines. Currently, all coal mined in the state is produced from surface mines.

The Office of Surface Mining granted the Montana regulatory program conditional approval April 1, 1980, followed by final approval February 11, 1982. Montana's Abandoned Mine Lands Program was approved November 24, 1980, and its emergency program was approved August 18, 1983. A Federal Lands Cooperative Agreement was approved May 8, 1981.

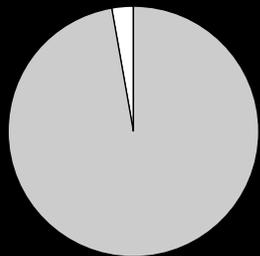
The Montana Abandoned Mine Land Program has completed \$16 million of high-priority projects, mostly closing open portals and shafts, subsidence abatement, and extinguishing surface and underground coal fires. An additional \$5.7 million has been spent on reclamation of environmental problems, largely reclaiming spoil areas. Montana has spent about \$750 thousand on emergency projects that eliminated subsidence hazards. In addition, the Office of Surface Mining spent over \$220 thousand on emergency projects before the state had emergency project authority.

Acid mine drainage continues to be a major problem from both abandoned coal and non-coal mines in Montana. Early reclamation techniques ranged from plugging of abandoned mines to prevent any water outflow, to building wetlands designed to remove contaminants from the water as it passed through. Short term success has been achieved; but, lasting and affordable technology for long-term success has not been forthcoming and the amount of money available does not allow for the construction and maintenance of expensive water treatment facilities.

In 1990, the state certified that Montana had completed all health and safety (Priority 1 and 2) abandoned coal mine problems and has proceeded to initiate reclamation of non-coal sites. As a result, Montana receives only its state share from the Abandoned Mine Land Fund and is currently undertaking a substantial number of non-coal (gold, silver, copper, and zinc) abandoned mine reclamation projects.

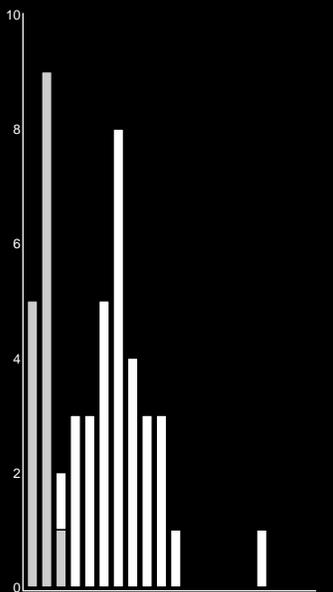
coal production¹⁰

	1978		1997		1978-1997 Rank
	Amount	Percent U.S. Total	Amount	Percent U.S. Total	
Tons Produced					
Surface	15,343,924	6.2%	33,352,674	5.7%	5
Underground	0	0%	11,549	0.002%	16
Lignite	224,375	1.0%	267,066	0.3%	4
Total	15,568,297	5.8%	33,631,291	3.0%	9
Number of Producing Mines					
Surface (bituminous coal)	6	0.1%	7	0.2%	16
Underground	1	0.3%	1	0.05%	16
Lignite (surface)	1	5.8%	1	4.1%	3
Total	8	0.1%	9	0.2%	18
Mine Production					
Average	1,946,037	2,738.6%	3,736,810	1,419.9%	
>1,000,000 tons	3	6.1%	3	1.4%	
300,000-1,000,000 tons	0	0%	0	0%	
<300,000 tons	5	0.08%	6	0.1%	



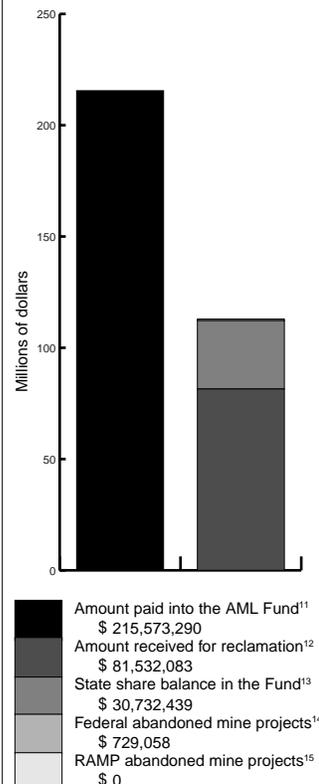
Production tonnage 1978-1997

■ U.S. Total
■ Montana Coal Production



Number of new permits 1978-1997

■ Interim Program
■ Permanent Program



Active mining and reclamation¹⁶

	1978	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	Total
Number of New Permits																					
Surface Mining	4	8	2	3	3	5	8	4	3	3	1	0	0	0	0	0	0	0	0	0	44
Underground Mining	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acreage Permitted																					
Surface Mining	6,273	10,533	1,992	6,587	5,673	4,320	5,145	46	3,116	195	12,795	0	240	0	0	0	0	0	0	0	56,915
Underground Mining	98	12	0	0	0	129	0	0	0	0	0	0	0	0	0	0	105	0	0	0	344
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acreage of Bond Release																					
Interim Prog. (final)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase 1	0	0	0	0	0	0	0	0	0	521	610	71	0	284	284	0	247	0	1,291	1,176	4,484
Phase 2	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0	787	0	801
Phase 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	0	0	0	0	0	80
Inspections																					
Complete	NA	NA	NA	NA	99	429	120	184	131	198	168	167	143	102	72	99	96	180	63	95	2,346
Partial	NA	NA	NA	NA	0	0	213	65	152	81	92	116	115	163	144	122	127	103	87	86	1,666
Oversight	0	0	0	0	NA	26	36	31	NA	45	27	7	12	11	17	12	12	20	20	22	298
Citations Issued																					
NOV's	NA	NA	NA	NA	20	8	22	14	19	12	21	18	22	10	11	12	27	14	12	8	250
CO's	NA	NA	NA	NA	0	0	1	1	4	4	1	0	0	3	3	2	1	0	5	2	27

Abandoned coal mine reclamation 1977-1997¹⁷

	Reclaimed Problems			Remaining Problems	
	OSM Emergency	State Emergency	Non-Emergency	Number	Estimated Cost
Priority 1 & 2 (Protection of Public Health, Safety, and General Welfare) and Emergency Projects					
Clogged Streams (miles)	0	0	3.5	0.6	\$ 100,000
Clogged Stream Lands (acres)	0	0	54.4	16.0	400,000
Highwalls (feet)	0	0	29,650.0	2,520.0	150,000
Impoundments (count)	0	0	3.0	0	0
Piles & Embankments (acres)	0	0	157.3	40.0	140,000
Slides (acres)	0	0	0.9	0	0
Gases (count)	0	0	1.0	0	0
Equipment & Facilities (count)	0	0	200.0	26.0	150,000
Water Bodies (count)	0	0	1.0	0	0
Industrial Waste (acres)	0	0	285.8	0.2	20,000
Portals (count)	0	2	1,060.0	6.0	18,000
Polluted Water: Agriculture & Industrial (count)	1.0	0	18.0	0	0
Polluted Water: Human Consumption (count)	0	0	12.0	0	0
Subsidence (acres)	2.0	4.0	571.0	0	0
Surface Burning (acres)	0	2.0	299.9	0	0
Underground Mine Fires (acres)	0	12.0	62.6	35.0	260,000
Vertical Openings (count)	1.0	0	596.0	4.0	12,000
Total					\$1,250,000
Priority 3 (Environmental Restoration)					
Bench (acres)	0	0	0.8	0	\$ 0
Industrial Waste (acres)	0	0	75.8	0	0
Equipment & Facilities (count)	0	0	58.0	0	0
Gob (acres)	0	0	148.5	0	0
Highwall (feet)	0	0	1,170.0	0	0
Haul Road (acres)	0	0	0.5	0	0
Mine Opening (count)	0	0	230.0	0	0
Pit (acres)	0	0	35.1	0	0
Spoil Area (acres)	0	0	887.4	23.0	12,000
Slurry (acres)	0	0	0	0	0
Slump (acres)	0	0	18.5	0	0
Water (gallons/minute)	0	0	2,847.5	250.0	7,000
Total					\$ 19,000